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FEASIBILITY STUDY OF HYPERNUCLEI PRODUCTION AT NICA/MPD

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NICA is a new flagship project at JINR aimed at the construction in Dubna of an accelerator complex for heavy ions and polarized particles. The main goal of the MPD experiment at NICA is the exploration of the structure of the phase diagram of dense nuclear matter. Hypernuclei are used as a laboratory offering the opportunity to study the properties of strong interactions involving hyperons, which play a key role in understanding of the structure of neutron stars. According to thermal model calculations, a pronounced maximum of the production rates of hypernuclei is expected at NICA energies. This will potentially allow determination of the hypernuclei properties, including lifetimes, with high precision improving the quality of the existing results. In this report, an overview of recent hypernuclei measurements will be given and MPD prospects for the study of hypernuclei production in heavy-ion collisions at NICA energies will be presented.

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